

## ULTRA-DIRECTIONAL MICROPHONES

### ABSTRACT OF THE DISCLOSURE

The present invention provides a highly directional audio response that is flat over five octaves or more by the use of multiple colinear arrays followed by signal processing. Each of the colinear arrays has a common center, but a different spacing so that it can be used for a different frequency range. The response of the microphones for each spacing are combined and filtered so that when the filtered responses are added, the combined response is flat over the selected frequency range. To improve the response, the output of the microphones for a given array spacing can also be filtered with windowing functions. To receive the response from other directions a “steering” delay may also be introduced in the microphone signals before they are combined. The invention also extends to two and three dimensional arrays.

733129 v3